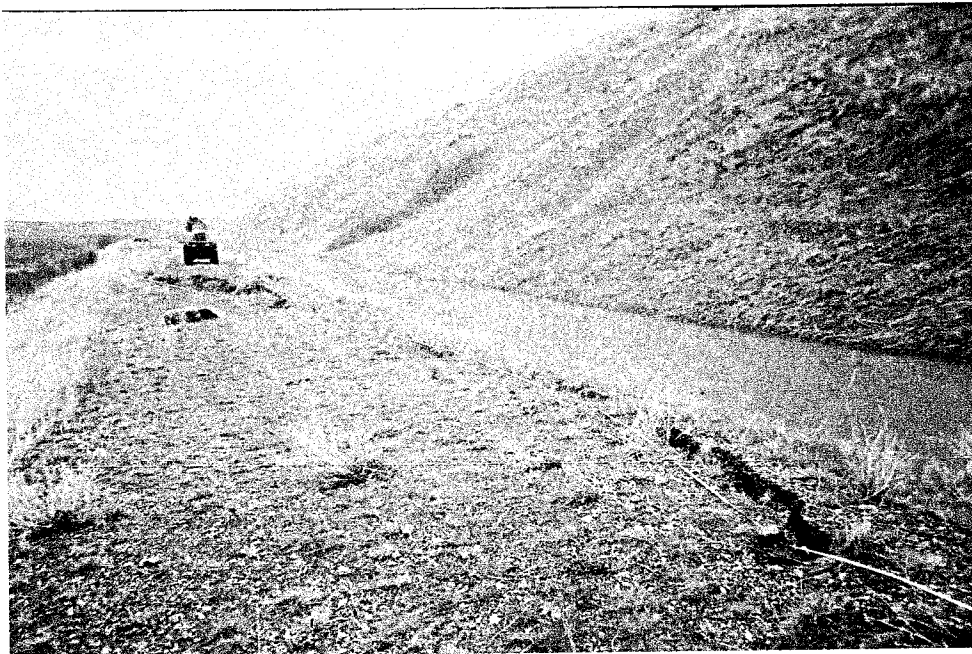


## Nilan Storage Project - Smith Canal Seepage and Slope Stability Repairs

The Nilan Storage Project is located in the northern portion of Lewis and Clark County, Montana, seven miles west of the town of Augusta. It consists of diversion canals from Smith and Ford Creeks, which divert water to Nilan Reservoir, an off-stream storage project. The Smith Creek diversion canal diverts water from the north bank of Smith Creek. The dam, diversion canals, and appurtenant structures were completed in 1951. Shortly after its first use, the Smith Creek Canal suffered a slope failure in the SE ¼ Section 26, Township 8 North, Range 20 West. The damage was repaired and the canal put back in service. An area adjacent to this original slope failure just a little further downstream slumped during canal operation in the summer of 2005. In addition to slope problems on the "backside" of the canal, much of the initial three miles of the canal suffers significant seepage losses. Recent seepage measurements showed an "end-to-end" loss of approximately 22 percent with the canal flowing less than half-full. Losses are assumed to be higher at higher flows. To ensure the continued viability of the project, these problems must be addressed. The proposed repairs involve the following:

1. Excavation and rebuilding the failed slope area
2. Lining the failed portions with one of the following: 1) buried membrane liners such as polyvinyl chloride (PVC), very low density polyethylene (VLDPE), or ethylene propylene diene monomer (EPDM), 2) buried geosynthetic clay liners (GCL), 3) exposed liners such as polymerized geotextile, PVC, EPDM, or concrete.  
Liners may consist of a combination of systems, including temporary, spray on types such as Polyacrylamide (PAM).

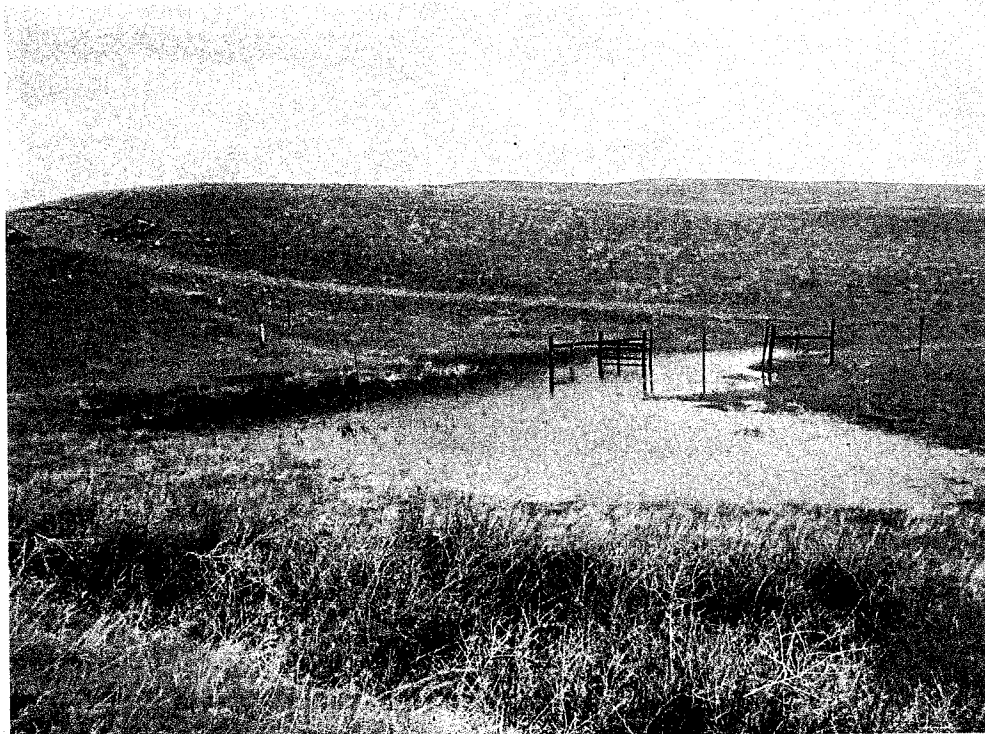
Proposed funding includes an RRGL grant for \$100,000 and a loan of \$50,000.



**2005-05-10 Sloughing on right canal berm**



**Failed canal embankment - May 2005**



**Flooding caused by seepage**